AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1. (Currently amended) A loop detector comprising:

a set of branch entries to maintain data relating to a set of branches, respectively, wherein said set of branch entries includes a first number of entries; and

an array able to maintain a set of iteration entries, wherein said set of iteration entries includes a second number of entries smaller than said first number of entries,

wherein said loop detector is able to allocate at least one of said iteration entries to store loop iteration data relating to at least one branch entry of said set of branch entries, respectively a set of loop iterations, wherein the number of entries in said array is smaller than the number of entries in said loop detector.

2. (Currently amended) The loop detector as in claim 1, wherein entries in said array are comprises a fully associative array.

3. (Currently amended) The loop detector as in claim 1, wherein the loop iteration data relating to said at least one branch entry comprises at least one the set of entries in said array stores a counter to count speculative iterations of said at least one branch loop.

4. (Currently amended) The loop detector as in claim 1, wherein the loop iteration data relating to said at least one branch entry comprises at least one the set of entries in said array stores a counter to count real iterations of said at least one branch loop.

5. (Currently amended) A method of storing a counter of loop iterations, the method comprising:

maintaining data relating to a set of branches in a set of respective branch entries of a loop detector, wherein said set of branch entries includes a first number of entries;

determining if loop iteration data for a branch of said set of branches is stored in an entry of an array associated with said loop detector, said array associated with a loop detector able to maintain a second number of entries smaller than said first number of entries; and

incrementing a counter in said ~~array~~ entry~~;~~

~~wherein the number of entries in said array is smaller than the number of entries~~ ~~in said loop detector.~~

6. **(Currently amended)** The method as in claim 5, comprising copying a number of actual iterations of said ~~loop~~ branch into said ~~array~~ entry.

7. **(Currently amended)** The method as in claim 5, comprising allocating an iteration entry of said array based on ~~the~~ a least recently used entry in said array.

8. **(Currently amended)** The method as in claim 5, wherein ~~said~~ incrementing said counter ~~in said array~~ comprises incrementing a counter of actual iterations of said ~~loop~~ branch.

9. **(Currently amended)** The method as in claim 5, wherein ~~said~~ incrementing ~~a sum in~~ said ~~array~~ counter comprises incrementing a counter of speculative iterations of said ~~loop~~ branch.

10. **(Currently amended)** The method as in claim 5, wherein ~~the entries of~~ said array ~~are~~ comprises a fully associative array.

11. **(Currently amended)** A method of counting loop iterations~~,~~ comprising:

maintaining data relating to a set of branches in a set of respective branch entries of a loop detector, wherein said set of branch entries includes a first number of entries; and

allocating an entry of an array associated with said loop detector to store loop iteration data relating to a branch entry of said set of branch entries,

wherein said array is able to maintain a set of iteration entries, said set of iteration entries includes a second number of entries smaller than said first number of entries

~~storing a counter of loop iterations in an array, wherein entries in said array are~~ ~~associated with more than one entry in a loop detector.~~

12. **(Currently amended)** The method as in claim 11~~, wherein~~ comprising ~~storing a~~ ~~counter of loop iterations comprises~~ storing in said entry a counter of speculative loop iterations of said branch.

13. **(Currently amended)** The method as in claim 11, ~~wherein~~ comprising ~~storing a counter of loop iterations comprises~~ storing in said entry a counter of real loop iterations of said branch.

14. **(Currently amended)** The method as in claim 11, ~~comprising~~ wherein said allocating comprises allocating said entry ~~a branch with an entry in said array~~ based on a least recently used entry in said array.

15. **(Currently amended)** The method as in claim 11, wherein ~~storing a counter of loop iterations in an~~ allocating the entry of said array comprises ~~storing a counter of loop iterations in a~~ allocating an entry of a fully associative array.

16. **(Currently amended)** A processor comprising a loop detector, said loop detector comprising: ~~an array to store a counter of loop iterations, wherein entries in said array are capable of being associated with more than one entry in said loop detector at various times~~

    a set of branch entries to maintain data relating to a set of branches, respectively, wherein said set of branch entries includes a first number of entries; and

    an array able to maintain a set of iteration entries, wherein said set of iteration entries includes a second number of entries smaller than said first number of entries;

    wherein said loop detector is able to allocate at least one of said iteration entries to store loop iteration data relating to at least one branch entry of said set of branch entries, respectively.

17. **(Currently amended)** The processor as in claim 16, wherein said ~~counter of loop iterations is a~~ loop iteration data comprises a speculative counter of loop iterations.

18. The loop detector as in claim 16, wherein ~~entries in~~ said array ~~are~~ comprises a fully associative ~~array~~.

19. **(Currently amended)** A system comprising:

    a dynamic random access memory unit; and

    a processor comprising a loop detector, said loop detector comprising: ~~an array to store a counter of loop iterations, wherein entries in said array are capable of being associated with more than one entry in said loop detector~~

        a set of branch entries to maintain data relating to a set of branches, respectively, wherein said set of branch entries includes a first number of entries; and

an array able to maintain a set of iteration entries, wherein said set of iteration entries includes a second number of entries smaller than said first number of entries,

wherein said loop detector is able to allocate at least one of said iteration entries to store loop iteration data relating to at least one branch entry of said set of branch entries, respectively.

20. **(Currently amended)** The system as in claim 19, wherein said loop iteration data comprises a counter is to count speculative iterations of said loop branch.

21. **(Currently amended)** The loop detector as in claim 19, wherein said loop iteration data comprises a counter is to count real iterations of said loop branch.